

**ABSTRACT**

**A gene detection field-effect device provided with an insulation film (2), a semiconductor substrate (3), and a reference electrode (4), includes:(a) the insulation film (2) including a nucleic acid probe (5) immobilized on one of the surfaces thereof and is in contact with a sample solution (6) containing at least one type of a target gene (601) for detection and analysis; (b) the semiconductor substrate (3) being installed so as to abut against the other surface of the insulation film (2); and (c) the reference electrode (4) being provided in the sample solution (6).**